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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,363	04/14/2005	Stig-Erik Hultholm	4819-4738	6979
27123 7590 07/07/2008 MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101				
EXAMINER				
MC GUTHRY BANKS, TIMA MICHELE				
ART UNIT		PAPER NUMBER		
1793				
NOTIFICATION DATE		DELIVERY MODE		
07/07/2008		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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### Office Action Summary

**Application No.**

10/531,363

**Applicant(s)**

HULTHOLM ET AL.

**Examiner**

TIMA M. MCGUTHRY-BANKS

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 and 7-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-14 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Status of Claims***

Claims 1-3 and 7-14 are currently amended and Claim 15 is new.

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

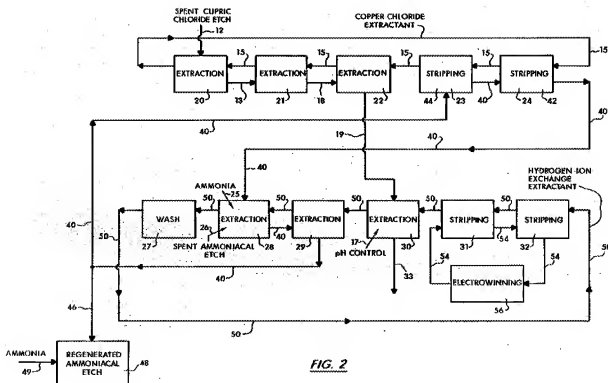
Claims 1-3, 7-9, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeMarthe et al (US 4,230,487) in view of Jensen et al (US 4,272,492) and Preidel (US 5,230,786).

DeMarthe et al teaches a method for selectively solubilizing the non-ferrous metals in sulfurized ores and concentrates. Copper, lead, zinc, and precious metals are brought into solution selectively with regard iron and sulfur (column 1, lines 13-16). The lixiviant is a cupric chloride solution, and a regenerating agent includes HCl (column 2, lines 33-40). The oxidation-reduction potential of the lixiviant solution is controlled between 400-800 mV (lines 61-63) in relation to a hydrogen electrode potential (column 4, lines 12 and 13). The potential is adjusted by the rate of delivery of air (column 6, lines 6-8). Regarding Claims 2 and 3, air and oxygen are

equivalent. Regarding Claim 11, the sulfurized ores and concentrates contain precious metals.

Regarding Claim 13, the pH range is 1-3 (abstract). However, DeMarthe et al does not teach the further steps of feeding, extracting, partitioning, feeding, neutralizing, feeding, extracting, transferring, and feeding as in Claim 1 or using an Ag/AgCl electrode as in Claim 1.

Regarding the further steps in Claim 1, Jensen teaches selectively extracting and recovering copper from acidic solutions such as those obtained by leaching copper ore (column 3, lines 62 and 63) as shown by FIG. 2:



Regarding the claimed two-stage liquid-liquid extraction, that Jensen teaches having more extraction stages does not negate Jensen's applicability as prior art. The transitional term “comprising,” which is synonymous with “including,” “containing,” or “characterized by,” is

inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See MPEP § 2111.03. Regarding the other valuable metals, it would be expected that the other metals would remain in solution since the copper is selectively extracted, e.g. unwanted metallic ions (column 11, lines 13 and 14). The partitioning step is met by extraction step 22 with stream 19 going to the pH control and stream 15 going to stream 40. It would be obvious to recycle the copper feed from which copper chloride is selectively extracted as an acidic leach solution to reduce operating costs (column 5, lines 60-65). Ammonia or other neutralization agents are added at 17 (column 8, lines 40-54). The second extraction stage is met by 29 and 30. The first and second organic solutions are sent to stripping stage 31 and 32 via 50, from which copper is electrowon.

The extraction is liquid-liquid. The stripping solution is sulfuric acid (column 5, lines 33 and 34). Regarding Claim 7, FIG. 2 shows parallel flow. Regarding Claim 8, the extraction unit operates at 35 °C (column 16, line 34). Regarding Claim 9, line 54 (sulfuric acid) in FIG. 2 comes from electrowinning stage 56 to stripping stage 31 (column 11, lines 20-32). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the copper recovery process of Jensen with the process of DeMarthe et al, since Jensen teaches that liquid-liquid extraction of copper is well known (column 2, lines 30-33); furthermore, the disclosed process economically and effectively utilizes extractants and provides a diversified copper product (column 18, lines 35-40).

Regarding using an Ag/AgCl electrode in Claim 1, it would have been obvious to one of ordinary skill in the art at the time the invention was made that an Ag/AgCl electrode could be

used in stead of the hydrogen electrode taught in DeMarthe, since Preidel teaches that Ag/AgCl and hydrogen electrodes are equivalent in the art of measuring potentials (column 1, lines 9-14).

Claims 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeMarthe et al in view of Jensen and Preidel as applied to claim 1 above, and further in view of Ray et al (US 3,476,553).

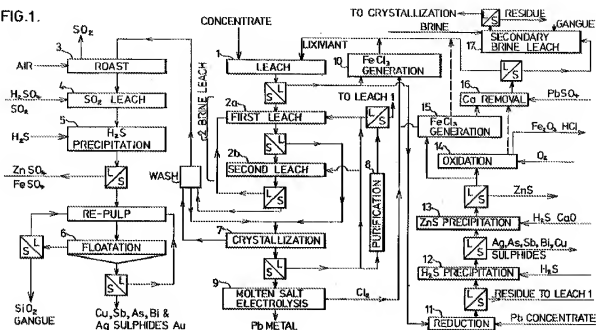
DeMarthe et al in view of Jensen and Preidel disclose the invention substantially as claimed. However, DeMarthe et al in view of Jensen and Preidel does not disclose using alkali hydroxide precipitation as claimed. Ray et al teaches recovering metals in solution by introducing hydroxyl ions (column 1, lines 16-18). Examples of hydroxides include Na, Li, Rb, K and Cs (column 2, lines 55 and 56). Regarding Claim 14, the metals include Ni, Co and Zn (lines 26 and 27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use alkali hydroxide precipitation to recover metals other than copper in the process of DeMarthe et al in view of Jensen and Preidel, since this process is an economical process for recovering metals from solution with high recovery and selectivity (column 1, lines 67 to column 2, lines 2).

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over DeMarthe et al in view of Jensen and Preidel as applied to claims 1 and 11 above, and further in view of Milner et al (US 4,082,629).

DeMarthe et al in view of Jensen and Preidel discloses the invention substantially as claimed. However, DeMarthe et al in view of Jensen and Preidel does not disclose the precipitation step as claimed. Milner et al teaches treating complex sulfide concentrates. The

solid leach residue containing iron, precious metals and sulfur is shown in Figure 1 (see also column 6, lines 21 and 22).

FIG.1.



The combination of DeMarthe et al in view of Jensen and Preidel and Milner et al would have yielded the predictable result of recovering desired metals present in the sulfide concentrates.

### *Response to Arguments*

Applicant's arguments filed 14 April 2008 have been fully considered but they are not persuasive. Applicant argues that Jensen et al does not teach the steps as in presently amended Claim 1. The examiner shows in the rejection above how Jensen et al meets the claimed limitations. The basis for the rejection is also set forth above.

***Allowable Subject Matter***

Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art does not disclose or suggest treating with sulfuric acid to obtain HCl as claimed.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMA M. MCGUTHRY-BANKS whose telephone number is (571)272-2744. The examiner can normally be reached on M-F 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Art Unit: 1793

/Roy King/

Supervisory Patent Examiner, Art Unit  
1793

/T. M. M./

Examiner, Art Unit 1793

3 July 2008